

REMARKS

Status of the Claims

Applicants respectfully submit that the amendments and remarks presented herein put the claims in condition for allowance, and respectfully request reconsideration thereof.

Prior to this amendment, claims 1-4, 9 and 14 were pending and had been examined. The Examiner indicated that claims 3, 9 and 14 are free of the art.

Applicants have amended claims 1, 9 and 14 and have added claims 19-22.

Information Disclosure Statement

Applicants have timely filed an Information Disclosure Statement. Applicants request that a copy of the PTO-1449 form with the Examiner's initials be returned to the applicants with the next communication.

Amendments to the Specification

Applicants have amended the title of the application as the Examiner has suggested. Applicants have also amended the paragraph on page 5, lines 6-11, of the specification to correct a clear typographical error. Neither of these

amendments introduces new matter, and applicants request their entry.

Obviousness-type Double-Patenting Rejection

Applicants have filed concurrently herewith a Terminal Disclaimer over U.S. Patent 6,624,166. This obviates the obviousness-type double-patenting rejection of claims 1-4, 9 and 14. Applicants request that the Examiner withdraw this rejection.

Amendments to the Claims

Claim 1

Applicants have amended claim 1 in four respects to more particularly point out and distinctly claim their invention. None of these amendments introduces new matter. They are fully supported by the specification and claims as originally filed. Applicants request their entry.

First, applicants have amended the R₁ definition in claim 1 to recite, *inter alia*, that the "aromatic ether is selected from the group consisting of substituted naphthyl ether, unsubstituted naphthyl ether, substituted phenyl ether, unsubstituted heteroaryl ether, and substituted heteroaryl ether. Support for this amendment can be found, for example, at pages 3-5.

Second, applicants have amended the R₄ definition in claim 1 to recite, *inter alia*, that the "R₄ aryl is selected from the group consisting of substituted naphthyl, unsubstituted naphthyl, and substituted phenyl." Support for this amendment can be found, for example, at page 3, lines 3-21 and page 5, lines 4-11.

Third, applicants have amended claim 1 by adding a proviso to recite "provided that when R₁ is chloro, R₃ is H and R₂ is NH₂, R₄ is not 3- or 4-pyridyl." This amendment excludes specific species from the genus of amended claim 1, examples of which can be found in the original specification. As stated in the MPEP §2173.05(i):

"[a]ny negative limitation or exclusionary proviso must have basis in the original disclosure. If alternative elements are positively recited in the specification, they may be explicitly excluded in the claims. See *In re Johnson* 558 F.2d 1008 1019, 195 USPQ 187, 196 (CCPA 1977)."

Support for a species in which R₁ is chloro, R₃ is H, R₂ is NH₂, and R₄ is 3-pyridyl is found in Example 3 on page 14, lines 1-8. Similarly, a species in which R₁ is chloro, R₃ is H, R₂ is NH₂, and R₄ is 4-pyridyl is found in Example 1 on page 12, line 9 to page 13, line 6.

Finally, applicants have amended the R₂ definition in claim 1 to recite, *inter alia*, that R₂ is "OR₅, NH(CHR₅)_m-COOR₅, N(R₅)R₆ or NH(CHR₅)_m OH". Applicants submit that amended claim 1 is now patentable over European Patent Application

EP 0193249, disclosed previously by applicants in the Information Disclosure Statement filed on February 25, 2004.

Claims 9 and 14

Applicants have amended claims 9 and 14 to more particularly point out and distinctly claim their invention. Applicants have amended the R_2 definition in claims 9 and 14 to recite, *inter alia*, that R_2 is " OR_5 , $NH(CHR_5)_m-COOR_5$, $N(R_5)R_6$ or $NH(CHR_5)_m OH$ ". Applicants submit that amended claims 9 and 14 are now patentable over European Patent Application EP 0193249. Neither amendment introduces new matter. They are fully supported by the specification and claims as originally filed. Applicants request their entry.

Claims 19-22

Applicants have also added claims 19-22. Claims 19 and 20 are directed to pharmaceutical compositions comprising the compounds of any one of claims 1-4. Claims 21 and 22 are directed to methods of treatment comprising administering a pharmaceutical composition comprising the compounds of any one of claims 1-4. Support for these new claims can be found, for example, in claims 9 and 14 as originally filed.

Rejections Under 35 U.S.C. § 102

Applicants note with appreciation the Examiner's indication that claims 3, 9 and 14 are free of the art.

Wermuth

Claims 1 and 2 stand rejected under 35 U.S.C. § 102(b) as anticipated by Wermuth (Wermuth et al., *J. Med. Chem.* **32**, pp 528-537 (1989)). The Examiner contends that compounds 16 and 18 referred on page 531 of Wermuth fall within the genera of claims 1 and 2. Applicants have amended claim 1 to overcome this rejection.

Specifically, applicants have amended the R₄ definition in claim 1 such that when R₄ is an aryl group, the aryl is selected from the group consisting of substituted naphthyl, unsubstituted naphthyl, and substituted phenyl. In contrast, Wermuth refers only to compounds in which the group corresponding to R₄ is an unsubstituted phenyl group. Thus, Wermuth does not anticipate applicants' amended claims 1 and 2. Accordingly, applicants respectfully request that the Examiner reconsider and withdraw the rejection.

Leshner

Claims 1 and 4 stand rejected under 35 U.S.C. § 102(b) as anticipated by Leshner (U.S. Patent No. 4,590,194). The Examiner contends that compound A-1 referred to on column 4, lines 42-60, of Leshner falls within the genera of claims 1 and 4. Applicants have amended claim 1 to overcome this rejection.

Specifically, applicants have added the proviso in claim 1 that when R₁ is chloro, R₃ is H, and R₂ is NH₂, R₄ is not 3- or 4-pyridyl. This provision excludes the cited Leshner

compound from claims 1 and 4. Thus, Lesher does not anticipate applicants' amended claims 1 and 4. Accordingly, applicants request that the Examiner reconsider and withdraw the rejection.

Heinisch

Claim 1 stands rejected under 35 U.S.C. § 102(b) as being anticipated by Heinisch (Heinisch et al., *Arch. Pharm. (Weinheim)* **320**, 1222-1226 (1987)). The Examiner contends that compounds 9a and 9b referred to on page 1223 fall within the genus of claim 1. Applicants have amended claim 1 to overcome this rejection.

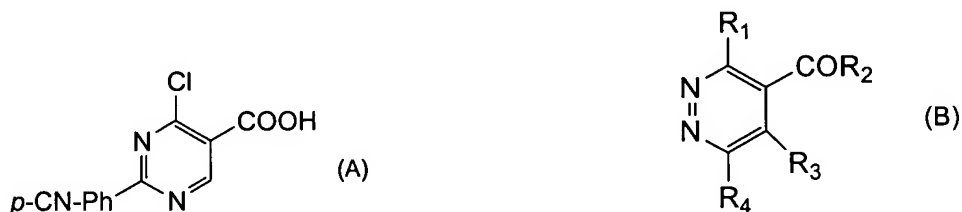
Specifically, applicants have amended the R₁ definition in claim 1 such that when R₁ is an aromatic ether group, the aromatic ether is selected from the group consisting of substituted naphthyl ether, unsubstituted naphthyl ether, substituted phenyl ether, substituted heteroaryl ether, and unsubstituted heteroaryl ether. In contrast, Heinisch only refers to compounds in which the group corresponding to R₁ is an unsubstituted phenyl ether. Thus, Heinisch does not anticipate applicants' amended claim 1. Accordingly, applicants request that the Examiner reconsider and withdraw the rejection.

Linz

Claims 1 and 2 stand rejected under 35 U.S.C. § 102(e) as anticipated by Linz (U.S. Patent No. 5,418,233). The Examiner contends that the compound referred to on column

22, lines 41-53, of Linz falls within the genera of claims 1 and 2. Applicants respectfully traverse.

The Linz compound¹ cited by the Examiner includes a pyrimidine ring structure. In contrast, applicants' claims 1 and 2 recite compounds that include a pyridazine ring structure. For comparison, the cited compound from Linz (A) and the formula from applicants' claim 1 (B) are depicted below. As is readily apparent, the positions of the two endocyclic nitrogens in Linz's pyrimidine compound (A) are clearly different from the two nitrogens in applicants' pyridazine compounds (B).



Accordingly, Linz's compound does not fall within the genera of applicants' claims 1 and 2. Applicants request that the Examiner reconsider and withdraw the rejection.

Claims 19-22

Added claims 19-22, which depend from claim 1, are patentable for at least the same reasons that claim 1 is

¹ "5-carboxy-4-chloro-2-(4-cyanophenyl)-pyrimidine"; Linz at column 22, lines 42-43 (emphasis added).

patentable. They are also directed to a subset of pharmaceutical compositions and methods of treatment that the Examiner has already found to be free of the prior art.

CONCLUSION

Applicants respectfully submit that all of the pending claims are in form for allowance. If the Examiner believes, however, that any matters remain outstanding, applicants respectfully request that the Examiner call the undersigned.

Respectfully submitted,



Tae Bum Shin
Limited recognition pursuant
to 37 C.F.R. §10.9(b)

(Signed in a representative
capacity as Agent for
Applicants pursuant to 37
C.F.R. § 1.34(a))

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